12. IMPLEMENTATION STRATEGY

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12.1 INTRODUCTION

This chapter sets forth the proposed framework and organization for the initial stage of implementing the Water Quality Program. The initial stage includes early actions to be carried out during the first 2 years and Stage 1 actions to be implemented during the first 7 years after the Record of Decision (ROD) on the Programmatic EIS/EIR. Subsequent staged development will be defined based on information received from studies and actions carried out during early implementation and Stage 1. The level of funding for all proposed actions will vary and depends on decisions made by the CALFED management structure, the legislature, and state and federal agencies.

Subsequent staged development will be defined based on information received from studies and actions carried out during early implementation and Stage 1.

The water quality actions were developed for early implementation and Stage 1 based on input from the Water Quality Technical Group (WQTG). This group consists of over 200 technical experts, agency representatives, and stakeholders—representing the environment, agriculture, drinking water interests, industry, and recreation who participate in the development of the Water Quality Program. The following criteria were recommended by the WQTG and were used to select the proposed Water Quality Program early implementation and Stage 1 actions:

- Seriousness of the water quality problem to be addressed by the proposed action.
- Degree to which the problem and solutions are well understood.
- Likelihood of the proposed solution eliminating impairment of beneficial uses.
- Availability of a willing and competent lead implementing entity.
- Timeframe in which the benefits of the action can be realized and measured.
- Benefits and costs of the action in relation to other proposed actions.
- Ability to leverage CALFED funds by partnerships with other entities and funding sources, including existing sources of CALFED agency funds.

- Equitable distribution of water quality benefits regionally and by beneficial use categories.

CALFED has adopted a general target of continuously improving Delta water quality for all uses, including in-Delta environmental and agricultural uses. CALFED Program actions and studies generally fall into two categories: environmental water quality and drinking water quality. The environmental water quality actions and studies assist existing agency programs to reduce turbidity and sedimentation; reduce the impairment caused by low DO conditions; reduce the impacts of pesticides, including OC pesticides; reduce the impacts of trace metals, mercury, and selenium; reduce salt sources to protect water supplies; and increase understanding of toxicity of unknown origin. The drinking water quality actions and studies are an aggressive mix of strategies to improve in-Delta water quality. These actions fall into four broad categories that: (1) enable users to capture more drinking water during periods of high Delta water quality, (2) reduce contaminants and salinity that impair Delta water quality, (3) evaluate alternative approaches to drinking water treatment in order to address growing concerns over DBPs and salinity, and (4) enable voluntary exchanges or purchases of high-quality source waters for drinking water uses. The latter action will be pursued in conjunction with other CALFED actions, such as conveyance and storage improvements, to generate significant improvements in drinking water at the tap.

The use of existing work groups or CALFED technical work groups from the Water Quality Technical Group will be used to receive input for developing implementation plans. Through existing efforts, some actions and studies are well underway to be implemented immediately, while others rely first on comprehensive monitoring, pilot studies, or research to improve the information base.

Recognizing that water quality in the Bay-Delta estuary is in immediate need of improvement, funding decisions for the first 2 years would emphasize actions that result in rapid and measurable improvements. This approach will assure that maximum possible water quality improvements are made in the shortest term. By the third year, emphasis will shift to a longer term perspective, where increasing investments are made in developing the understanding that is fundamental to correcting more complex and technically challenging problems. Also, investments in corrective actions will be increasingly directed at the root causes of complex problems, involving actions that may take many years to fully implement.

A more refined plan for implementation will be developed for each water quality category through an ongoing comprehensive planning process involving state and federal agencies and stakeholders. The planning process will include developing a prioritization method for water quality actions and identifying resources and

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assurances necessary to implement the actions, establishing a governance structure, identifying the implementing agencies, developing a decision-making process, developing targets and indicators of successful implementation, determining mechanisms for adaptive management, and integrating with other CALFED resource areas and Program elements. Project site-specific environmental documents and any permits necessary will be developed and obtained prior to implementation of water quality actions.

To begin development of the implementation plans, CALFED has begun to establish working groups that consist of agency representatives and stakeholders. These groups will help to prioritize actions and to identify funding resources, appropriate decision-making processes, appropriate linkages, and specific coordination mechanisms and regulatory actions that are consistent with and conducive to meeting the CALFED Program water quality goals and objectives.

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Success in achieving the CALFED water quality objectives will depend on close coordination and collaboration among agencies with jurisdiction over water quality and stakeholders with an interest in water quality. The following agencies are identified as having key roles:

- **Federal:**
  - U.S. Environmental Protection Agency
  - U.S. Fish and Wildlife Service
  - U.S. Department of Agriculture
  - U.S. Bureau of Reclamation

- **State:**
  - California Department of Water Resources
  - California Department of Food and Agriculture
  - California Department of Health Services
  - California Department of Pesticide Regulation
  - State Water Resources Control Board
  - Central Valley Regional Water Quality Control Board
  - San Francisco Bay Regional Water Quality Control Board

12.2 GOAL

The Water Quality Program's goal for water quality is to provide good water quality for environmental, agricultural, drinking water, industrial, and recreational beneficial uses.

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12.3 PRINCIPLES

The following principles will be followed by the Water Quality Program throughout implementation:

The Water Quality Program emphasizes voluntary, cooperative efforts to improve water quality but will work with regulatory entities to assure program goals are accomplished where voluntary efforts may prove insufficient.

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- Positive mechanisms will be used to assure accountability, fiscal integrity, and technical quality in implementing Water Quality Program actions.
- To the extent possible, existing water quality programs and capabilities will be used to meet Water Quality Program goals and objectives.
- Agency regulatory responsibilities will be coordinated to provide appropriate incentives for water quality improvement, and enhance opportunities to form partnerships among governmental and private interests. There will be no change in existing regulatory authority.
- Independent peer review and evaluation of the Water Quality Program and its success in implementation of actions will be used to prevent and correct water quality problems, and to provide recommendations for adaptive management.
- The Water Quality Technical Group, comprised of agencies and stakeholders, will be utilized to help plan and implement the Water Quality Program, and to help establish interim water quality targets that demonstrate continual water quality improvement.

12.4 EARLY IMPLEMENTATION AND STAGE 1 ACTIONS

The CALFED Implementation Plan lists the Stage 1 Water Quality Program actions (first 7 years commencing with the ROD on the Programmatic EIS/EIR and the Stage 1a water quality actions (2 years before the ROD on the Programmatic EIS/EIR).

12.5 LINKAGES

Many Water Quality Program actions both support and are linked to other CALFED resource areas and program elements. For example, watershed activities can improve water quality by helping to identify and control nonpoint sources of pollution, and identify and implement methods to control or treat contaminants flowing to the Bay-Delta. Surface and groundwater storage along with Delta conveyance improvements can help in the management of inflows to and exports from the Delta. Water use efficiency measures can improve water quality entering the Delta by reducing some agricultural and non-agricultural discharges containing pollutants. Ecosystem restoration actions may degrade drinking water quality by increasing organic carbon loads. Levee stability actions can avoid catastrophic levee failures in the Delta and avoid making the Delta waters unusable for drinking water purposes. Finally, the CALFED Science Program will be instrumental in applying adaptive management involving water quality actions and studies.

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12.6 MANAGEMENT AND GOVERNANCE

A key feature in assuring successful Program implementation is the development of a long-term governance structure for CALFED that can manage and oversee all aspects of the Program, including staged decision making, Program balance, and adaptive management. The proposal for a CALFED long-term governance structure is included in Chapter 4 in the Implementation Plan. Passing the necessary legislation and establishing new or revised governance structures may take several years. For the interim, CALFED proposes to continue the current structure but modified to serve implementation functions. Until a long-term governance structure is in place, the CALFED Policy Group will continue to make management decisions for Water Quality Program actions based on recommendations from water quality working groups, expert panels, and other public advisory groups. The role and mission of these working groups are discussed below. The proposed long-term and interim CALFED governance structures are described in detail in the Implementation Plan.

The proposal for a CALFED long-term governance structure is included in Chapter 4 in the Implementation Plan.

12.6.1 Broad Public Advisory Council

In the interim, the CALFED Program will continue to receive input and advice from the public, Indian tribes, and interested stakeholders. Either the BDAC or a

Either the BDAC or a similar advisory group will serve CALFED in the interim.

similar advisory group will serve CALFED in the interim. A new advisory committee will be established to advise the long-term governing body.

12.6.2 *Delta Drinking Water Council*

The Delta Drinking Water Council was formed to receive stakeholder advice and input into the decision-making process for drinking water issues. The Delta Drinking Water Council is a work group of the BDAC and consists of representatives of various stakeholder interests and representatives from designated agencies with jurisdiction over drinking water issues (for example, EPA and DHS).

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The functions of the Delta Drinking Water Council are summarized below:

- Serves as the advisory body related to CALFED drinking water studies and actions.
- Based on performance of drinking water studies and actions, makes recommendations to the Water Quality Program, CALFED agencies, and the BDAC on treatment, health effects, alternative water sources, additional conveyance, storage, and operations.
- Uses expert panel reviews and recommendations.

12.6.3 *Ecosystem Roundtable*

The Ecosystem Roundtable consists of environmental, recreational (including boating, hunting, and fishing), industrial, and local government interests with expertise in water quality. The Roundtable serves as a forum to incorporate stakeholder input into the decision-making process for actions or programs related to ecosystem restoration and ecosystem water quality. This group is a working group of the BDAC.

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The functions of the Ecosystem Roundtable are summarized below:

- Based on performance of ecosystem water quality studies and actions, makes recommendations to the Water Quality Program, CALFED agencies, and the BDAC.
- Coordinates with and helps to integrate ecosystem water quality actions with Ecosystem Restoration Program actions.

- Uses expert panel reviews and recommendations.

12.6.4 Water Quality Technical Group

The Water Quality Technical Group has provided significant input into the development of the Water Quality Program since its inception. The group is over 200 strong and represents agencies and stakeholders from environmental, agricultural, municipal, industrial and recreational interests. Technical teams from the Water Quality Technical Group helped to develop the Water Quality Program Plan, including the actions and studies presented in the plan. The Water Quality Technical Group or work groups formed from the Water Quality Technical Group will function as advisors on CALFED priority actions, targets, monitoring, and assessment during the interim governance period and throughout long-term implementation of the Water Quality Program. The Water Quality Technical Group is a source of expertise in all of the action categories. This group can be instrumental in assisting agencies responsible for implementing Water Quality Program actions and studies.

The Water Quality Technical Group or work groups formed from the Water Quality Technical Group will function as advisors on CALFED priority actions, targets, monitoring, and assessment during the interim governance period and throughout long-term implementation of the Water Quality Program.

The functions of the Water Quality Technical Group or individual work groups are summarized below:

- Identifies water quality actions and targets, and makes recommendations to the Water Quality Program for implementation.
- Reviews and comments on work plans and project completion reports.
- Represents a pool of resources for agency and stakeholder expertise for ad hoc technical expert panels.

12.6.5 Expert Panels

Expert panels will be commissioned at various times—for various reasons and durations—in time to address specific issues through a public setting. Each expert panel will consist of nationally and internationally known experts in the field being addressed. Membership criteria and selection will be determined by the appropriate policy or working group (for example, the CALFED Policy Group, Delta Drinking Water Council, Water Quality Technical Group, and Ecosystem Roundtable). Each expert panel will be formed at the discretion of CALFED. The panels will present their conclusions to the Water Quality Program and the appropriate working group.

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12.7 ADAPTIVE MANAGEMENT STRATEGY

The simplest definition of adaptive management is "learning by doing." Adaptive management also is defined as a science-directed process whereby the possible solutions to prioritized problems are implemented, monitored, and evaluated and then either are repeated or evolve into the next round of testing.

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Using adaptive management, appropriate modifications can be made at each step of the process to accommodate variables or conditions that were previously unknown or unforeseeable, and to provide a continual feedback mechanism. The foundation of this approach is built on data and information about water quality conditions at all sites of concern. Based on these data and information, water quality problems can be identified. Each problem is assessed, based on existing data and information, as well as more data and information gained through continual monitoring and research. Based on the assessments, it may be possible to find potential solutions to identified water quality problems. Each potential solution then is evaluated through further monitoring and research, which will lead to identification of the best alternatives. Finally, the best possible solutions then can be implemented when the best alternatives have been identified.

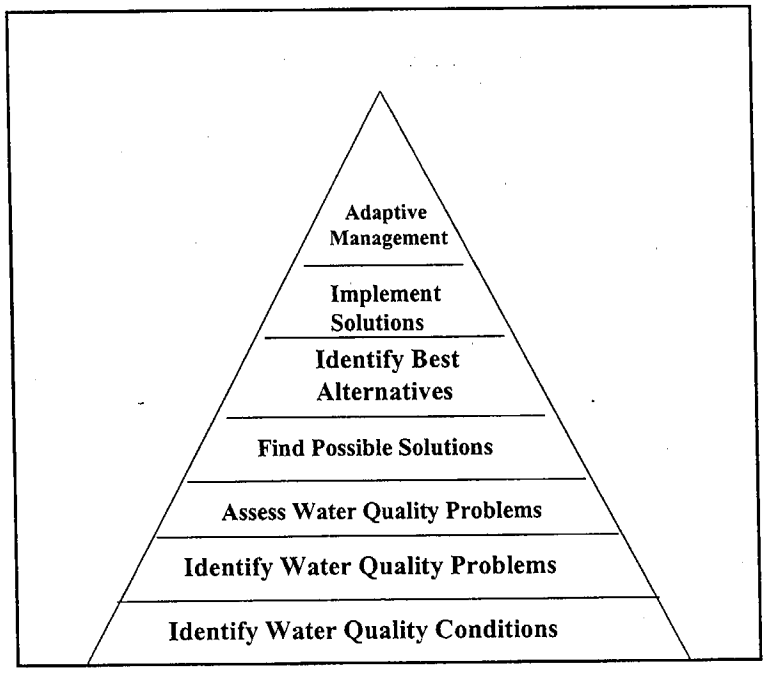

Figure 14. Adaptive Management Process

Figure 14 depicts the steps to identifying and implementing solutions that can be applied to Water Quality Program actions.

Individual strategies will be prepared for water quality parameters such as low DO, selenium, pesticides, salinity, sediment, aquatic toxicity, organochlorine pesticides, and other trace metals. Some of these water quality parameters are targeted by the regulatory agencies for development of TMDLs. Mercury is one of the targeted parameters, along with others such as diazinon and chloripyifos. CALFED will develop individual implementation plans for those water quality parameters targeted for TMDLs. These plans will be closely coordinated with the Ecosystem Roundtable and will complement efforts among CALFED agencies and non-CALFED agencies with existing regulatory authority. This coordination will help assure success in achieving the CALFED Program water quality goals and objectives.

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